Academic Program Description Form

University Name: Mosul

Faculty/Institute: College of Agriculture and Forestry

Scientific Department: Department of Agricultural Machines and Equipment

Academic or Professional Program Name: Bachelor of Science in Agricultural Machines and Equipment.

Final Certificate Name: Bachelor of Science in Agricultural Machines and Equipment.

Academic System: Semester

Description Preparation Date: 8 / 12 /2025

File Completion Date: 8 / 12 /2025

Signature:

Head of Department Name:

Dr. Yousif Yakoub Hilal

Date: 8 / 1 /2026

Signature:

Scientific Associate Name:

Dr. Hameed Hamoud Ali

Date: 8 / 1 /2026

The file is checked by:

Department of Quality Assurance and Performance Evaluation Division

Assistant Lecturer: Oday Abdulhadi Adday

Director of the Quality Assurance Unit Officer: Dr. Ramya Amer Khalil

Date: 8 / 1 /2026

Signature:

Approval of the Dean: Dr. Ali Farouk Al-Maadedi

1. Program Vision

Developing agricultural education aligned with global standards, cultivating professionals who lead technological transformation and sustainability in the field of agricultural machinery and equipment.

2. Program Mission

Providing comprehensive academic programs that integrate theoretical knowledge with practical skills in agricultural machinery and equipment, while promoting scientific research and industrial partnerships. The department is committed to graduating technically and managerially competent professionals capable of meeting the challenges of modern agriculture, contributing to sustainable development, and serving society with integrity, humanistic values, and professional ethics.

3. Program Objectives

- **Technical Development:**

Provide the students with skills in designing, operating, and maintaining agricultural machinery using state-of-the-art smart agricultural technologies.

- **Sustainability Enhancement:**

Integrate concepts of sustainable agriculture and energy efficiency into the academic curriculum.

- **Labor Market Adaptability:**

Prepare graduates to effectively function in interdisciplinary environments that encompass agricultural engineering and technology.

- **Innovation and Research:**

Promote applied research in areas such as agricultural process automation and renewable energy.

- **International Collaboration:**

Support student and academic exchange programs with European and global universities through joint agreements aimed at enhancing academic and cognitive skills.

4. Program Accreditation

Does the program have program accreditation? And from which agency?

In Progress

5. Other external influences

- ✓ The family problems facing students negatively affect the students' performance in the academic program
- ✓ Extracurricular activities help students achieve greater achievements in implementing the academic program
- ✓ The economic situation of students and their involvement in work to save money negatively affects their academic performance.
- ✓ The student's learning competence from his preparatory studies is one of the most important indicators of excellence in the performance of the academic program.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	13	27	%14.60	basic
College Requirements	11	31	%16.75	basic
Department Requirements	38	127	%68.65	basic
Summer Training	Satisfactor	Satisfactor	Satisfactor	basic
Other	–	–	–	–

* This can include notes whether the course is basic or optional.

7.Program Description					
Year/Level	**Course Code**	**Course Name**	**Credit Hours**		**Units**
			theoretical	**practical**	
First Year/First Semester 2025-2026	PRFC112-AM	Principles of Field Crops	2	2	3
First Year/First Semester 2025-2026	PRSS113-AM	Principles of Soil Science	2	2	3
First Year/First Semest2025-2026er	TRAC134-AM	Tractors	2	2	3
First Year/First Semester 2025-2026	MATH130-AM	Mathmatics 1	3	-	3
First Year/First Semester 2025-2026	PHYS110-AM	Physics	2	2	3
First Year/First Semester 2025-2026	DEHR100-AM	Democracy and Human Rights	2	-	2
First Year/First Semester 2025-2026	COMA103-AM	Computer Application 1	2	-	2
First Year/First Semester 2025-2026	ENGL101-AM	English Language 1	2	-	2
First Year/ Second Semester 2025-2026	PHCH108-AM	Physics Chemistry	2	2	3
First Year/ Second Semester 2025-2026	MATH132	Mathmatics 2	3	-	3
First Year/ Second Semester 2025-2026	SURV120-AM	Surveying	2	2	3
First Year/ Second Semester	PRHS116-AM	Principles of Horticultural Science	2	2	3

2025-2026					
First Year/ Second Semester 2025-2026	ENGD118	Engineering Drawing	-	2	1
First Year/ Second Semester 2025-2026	PAEX206-AM	Principles of agricultural extension	2	-	2
First Year/ Second Semester 2025-2026	WORS135	Workshop 1	-	2	1
First Year/ Second Semester 2025-2026	ARAL102	Arabic Language	2	-	2
Second Year/First Semester 2025-2026	STME241	Static Mechanics	2	4	4
Second Year/First Semester 2025-2026	META242	Metallurgy	2	4	4
Second Year/First Semester 2025-2026	PRPP117-AM	Principles of Plant Protection	2	2	3
Second Year/First Semester 2025-2026	AGMA243	Agricultural Machinery	2	2	3
Second Year/First Semester 2025-2026	PAEC115-AM	Principles of Agricultural Economy	2	-	2
Second Year/First Semester 2025-2026	ALLA236-AM	Alteration and leveling of land	2	4	4
Second Year/First Semester 2025-2026	INDR245	Industrial Drawing	-	4	2
Second Year/First Semester 2025-2026	WORS246	Workshop 2	-	2	1

Second Year/First Semester 2025-2026	ENGL201-AM	English Language 2	2	-	2
Second Year/First Semester 2025-2026	CBAP200-AM	Crimes of the defunct Baath Party	2	-	2
Second Year/ Second Semester 2025-2026	ARAL102-AM	Arabic Language 2	2	-	2
Second Year/ Second Semester 2025-2026	DYME247-AM	Dynamic Mechanics	2	4	4
Second Year/ Second Semester 2025-2026	SOPH346-AM	Soil Physics	2	4	4
Second Year/ Second Semester 2025-2026	PEST417-AM	Pesticide	2	4	4
Second Year/ Second Semester 2025-2026	PRFI111-AM	Principles of Food Industry	2	2	3
Second Year/ Second Semester 2025-2026	PRAP114-AM	Principles of Animal Production	2	4	4
Second Year/ Second Semester 2025-2026	STAT109	Statistical	2	2	3
Second Year/ Second Semester 2025-2026	COMA203-AM	Computer Application 2	2	-	2
Third Year/ First Semester 2025-2026	THER375	Thermodynamics	2	4	4
Third Year/ First Semester 2025-2026	SOPE376	Soil Preparation Equipment	2	2	3
Third Year/ First Semester	ANPM224	Animal Production Mechanization	2	4	4

2025-2026					
Third Year/ First Semester 2025-2026	SOFE377	sowing and fertilizing equipment	2	2	3
Third Year/ First Semester 2025-2026	FLME78	Fluid Mechanics	2	4	4
Third Year/ First Semester 2025-2026	IRDR308-AM	Irrigation and Drainage	2	2	3
Third Year/ Second Semester 2025-2026	METP379	Mechanics Of Tractor Performance	2	4	4
Third Year/ Second Semester 2025-2026	OMCS380	Orchard machinery and crop servicing	2	2	3
Third Year/ Second Semester 2025-2026	IRDE381	Irrigation and Drainage Equipment	2	4	4
Third Year/ Second Semester 2025-2026	DAMA382	Design Of Agricultural Machinery	2	4	4
Third Year/ Second Semester 2025-2026	INCE383	Internal Combustion Engine	2	2	3
Third Year/ Second Semester 2025-2026	DAAE302	Design and analysis of agricultural experiments	2	2	3
Fourth Year/ First Semester 2025-2026	MART475	Maintenance and Repair of Tractors	2	4	4
Fourth Year/ First Semester 2025-2026	HEME476	Heavy machines and equipment	2	4	4
Fourth Year/ First Semester 2025-2026	HYSE477	Hydraulic system and Equipment	2	2	3

Fourth Year/ First Semester 2025-2026	FPEM478	Food processing Equipment manufactures	2	2	3
Fourth Year/ First Semester 2025-2026	ELST479	Electrical systems of Tractor	2	2	3
Fourth Year/ First Semester 2025-2026	AGBU480	Agricultural Buildings	2	2	3
Fourth Year/ First Semester 2025-2026	REPR402-AM	Research Project 1	-	2	1
Fourth Year/ First Semester 2025-2026	ENGL401_AM	English Language 4	2		2
Fourth Year/ Second Semester 2025-2026	HAEQ481	Harvesting Equipment	2	4	4
Fourth Year/ Second Semester 2025-2026	POHE482	Post Harvest Equipment	2	2	3
Fourth Year/ Second Semester 2025-2026	MAAM483	Management of Agricultural Machineries	2	4	4
Fourth Year/ Second Semester	PLPE484	Plant Protection Equipment	2	2	3
Fourth Year/ Second Semester 2025-2026	FOEQ485	Forage Equipment	1	2	2
Fourth Year/ Second Semester 2025-2026	SEMN404-AM	Seminar	1	-	1
Fourth Year/ Second Semester 2025-2026	REPR403-AM	Research Project 2	-	2	1
Fourth Year/ Second Semester 2025-2026	COMA403_AM	Computer Application 4	2		2

1. Expected learning outcomes of the program	
Knowledge	
The code	knowledge and understanding
A6	The student should be able to grasp the basics of basic and applied sciences and modern technologies related to agriculture, food, and the principles of planning and implementing agricultural operations.
A9	The student should be able to explain the basics of agricultural engineering and the principles of planning and implementing agricultural operations.
A13	The student should be able to familiarize themselves with various scientific methods for the development and improvement of agricultural resources, facilities, and sectors.
A23	The student should be able to classify types of agricultural equipment and devices, their uses, mechanical systems, and water pumps used in agricultural production.
A35	The student should be able to explain the basics of designing irrigation systems and post-harvest processes according to concepts and elements of quality management and safety in agriculture and food, such as drying, pasteurization, storage, and processing.
Skills	
The code	The mental (intellectual) skills:
B1	The student should be able to systematically and positively exercise various thinking skills in diagnosing problems and issues encountered during work, and propose appropriate solutions.
B32	The student should be able to innovate experimental designs and collect and analyze data under field, field, and laboratory conditions.
B39	The student should be able to choose the best proposed alternatives to solve a agricultural problem to achieve maximum efficiency for the agricultural establishment and utilize available natural resources to achieve sustainable agricultural development.
Professional (practical) skills:	
The code	Professional (practical) skills:
C1	The student should be able to design scientific experiments to solve agricultural problems by applying modern techniques related to agricultural operations and food production.
C23	The student should be able to apply theories of engine and tractor operation and usage
C24	The student should be proficient in using modern techniques, managing agricultural machinery and equipment, irrigation and drainage systems, agricultural structures, greenhouses, automated service strategies, and agricultural mechanization.

Communication and Information Technology Skills:	
The code	Communication and Information Technology Skills:
D2	The student should be able to effectively engage in reinforcing concepts of coexistence, tolerance, and diversity, both in practice and application.
D11	The student should be able to master problem-solving methods and time management in the agricultural mechanization field.
D14	The student should be able to keep up with the requirements of the job market by familiarizing themselves with modern developments in the field of agricultural machinery and equipment.
Ethics	
The code	Positions/Beliefs (Values, Independence, Responsibility):
E2	The student should be able to contribute to enhancing understanding and awareness of professionalism in work and to assume legal, ethical, and social responsibilities.

2. Teaching and Learning Strategies

- ✓ Theoretical lectures
- ✓ Watching scientific films online (Data Show)
- ✓ Field applications
- ✓ Assigning students homework assignments.
- ✓ Implementing some lessons in laboratories that contain miniature models of agricultural machinery parts.
- ✓ Conducting summer training by sending students to relevant departments and directorates.
- ✓ Assigning students to conduct experiments and turn them into mini-research and reports.
- ✓ E-learning by assigning students to search the web engines to find solutions to field and technical problems directed to them.
- ✓ Departmental seminars held for discussion

3. Evaluation methods

- ✓ Homework assignments and solving mathematical problems.
- ✓ Giving grades based on the level of participation and interaction within the lecture.
- ✓ Writing reports after completing the application period to assess students' ability to diagnose problems and find solutions.
- ✓ Classroom seminars and reports presented and discussed by students.

- ✓ Adhering to specified deadlines for submitting assignments and required research by students.
- ✓ Daily, periodic, and final exams reflecting the student's level of interest in cognitive and skill acquisition.
- ✓ Extracurricular activities (creativity, specialization skills).

4. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
professor	–	Agricultural machines and machinery	–	–	3	–
Assistant Professor	–	Agricultural machines and machinery	–	–	6	–
Lecturer	–	Agricultural machines and machinery	–	–	12	–
Assistant Lecturer	–	Agricultural machines and machinery	–	–	2	–

Professional Development

Mentoring new faculty members

- ✓ Developing skills to enhance self–confidence, a positive orientation towards a culture of quality, the requirements of enhancing a sense of responsibility, belief in the spirit of teamwork and its role in achievement, and developing a sense of function and ethical conscience.

- ✓ Evaluating academic courses and plans in coordination with academic departments to ensure that they meet labor market requirements.
- ✓ Possessing the skills of guiding and guiding students.
- ✓ The ability to produce educational materials according to quality specifications, including academic curricula, media, lectures and educational supplies.

Professional development of faculty members

- ✓ Developing educational skills through diversifying teaching methods, dealing positively with and practicing feedback, using educational techniques, and focusing on developing intellectual and competitive skills among students.
- ✓ Developing skills to address problems and phenomena affecting the course of the educational process in the college
- ✓ Developing the ability to evaluate academic courses and plans in coordination with academic departments to ensure that they meet labor market requirements.
- ✓ Developing the ability to measure the satisfaction of beneficiaries (faculty members, students, the community) with the educational and research process at the college.
- ✓ Evaluating tests and means of evaluating students, and preparing reports to follow up on their results.

5. Acceptance Criterion

- ✓ Students are accepted into college programs centrally through the Central Admissions Department at the Ministry of Higher Education and Scientific Research and according to the application channels approved by the Ministry.
- ✓ Students are distributed among the department's program according to the grade point average and the students' desire.
- ✓ To be physically fit and healthy based on the medical examination report
- ✓ The average of the advanced student, according to the minimum averages approved by the Ministry.

6. The most important sources of information about the program

- ✓ The main source of program information is the minutes of the Ministerial Committee of Experts for the departments corresponding to the Department of Agricultural Machinery and Machinery, which are accredited as a scientific body by the Committee of Deans of Colleges of Agriculture.
- ✓ The study prepared by the Scientific Committee and the Department Council and approved by the College Council, which includes proposals for modernizing agricultural specializations and simulating the three most important corresponding scientific departments accredited internationally.
- ✓ Local and regional market needs.

7. Program Development Plan

A plan was developed to develop the program after studying the internal review notes by the faculty members, the quality assurance committees, the department's scientific committee, the department council, the external review of the program, and the students' notes through analyzing the results of student questionnaires for the courses. Notes from the academic advisors and analysis of data from the college's questionnaire committee questionnaires and examination question evaluation reports for all courses. The program is as follows:

- ✓ Inadequate practical training
- ✓ The lack of a clear mechanism to help struggling students and motivate outstanding students
- ✓ Students' lack of familiarity with university regulations governing the educational process.

Skills															Basic or optional	Course Name	Course Code	Year/Level
E2	D14	D11	D2	C24	C23	C19	C1	B39	B32	B1	A35	A23	A9	A6				
•						•			•					•	Basic	Principles of Field Crops	PRFC112	
•						•			•					•	Basic	Principles of Soil Science	PRSS113	
•	•			•					•	•			•		Basic	Tractors	TRAC134	
•						•			•					•	Basic	Mathmatics 1	MATH130	2026-2025 First Year/ First Semester
•									•					•	Basic	Physics	PHYS110	
•			•												Basic	Democracy and Human Rights	DEHR100	
•									•					•	Basic	Computer Application 1	COMA103	
•									•					•	Basic	English Language 1	ENGL101	
•									•	•					Basic	Physics Chemistry	PHCH108	
•									•					•	Basic	Mathmatics 2	MATH132	
•						•			•					•	Basic	Surveying	SURV120	
•						•			•					•	Basic	Principles of Horticultural Science	PRHS116	2026 – 2025 First Year/ Second Semester
						•							•		Basic	Engineering Drawing	ENGD118	
•						•			•					•	Basic	Principles of agricultural extension	PAEX206	
•									•					•	Basic	Arabic Language	ARAL102_AM	
				•				•					•		Basic	Workshop 1	WORS135	
•			•						•				•		Basic	Static Mechanics	STME241	
•			•						•				•		Basic	Metallurgy	META242	
•						•			•					•	Basic	Principles of Plant Protection	PRPP117	
•	•			•					•	•			•		Basic	Agricultural Machinery	AGMA243	2026-2025
•									•			•			Basic	Principles of Agricultural Economy	PAEC115	second Year / First Semester
•						•			•					•	Basic	Alteration and leveling of land	ALLA236	
•				•					•				•		Basic	Industrial Drawing	INDR245	
													•		Basic	Workshop 2	WORS246	
•									•					•	Basic	English Language 2	ENGL201	
•									•					•	Basic	Arabic Language 2	ARAL102	
•	•			•					•	•			•		Basic	Dynamic Mechanics	DYME247	
•						•			•					•	Basic	Soil Physics	SOPH346	
•						•			•					•	Basic	Pesticide	PEST417	
•	•					•	•			•					Basic	Principles of Food Industry	PRFI111	2026 – 2025 second Year/ Second Semester
•						•			•					•	Basic	Principles of Animal Production	PRAP114	
•			•					•						•	Basic	Statistical	STAT109	
•									•					•	Basic	Computer Application 2	COMA203	
•						•									Basic	Crimes of the defunct Baath Party	CBAP200	
•	•			•					•	•			•		Basic	Thermodynamics	THER375	
•	•			•					•	•			•		Basic	Soil Preparation Equipment	SOPE376	

•	•			•					•	•			•		Basic	Animal Production Mechanization	ANPM224	2026-2025 third Year/ First Semester
•	•			•					•	•			•		Basic	sowing and fertilizing equipment	SOFE377	
•		•		•			•			•	•				Basic	Fluid Mechanics	FLME78	
•		•		•			•			•	•				Basic	Irrigation and Drainage	IRDR308	
•	•	•			•	•			•	•				•	Basic	Mechanics Of Tractor Performance	METP379	
•	•			•					•	•			•		Basic	Orchard machinery and crop servicing	OMCS380	
•		•		•			•			•	•				Basic	Irrigation and Drainage Equipment	IRDE381	2026 – 2025 third Year/ Second Semester
•	•			•					•	•			•		Basic	Design Of Agricultural Machinery	DAMA382	
•						•							•		Basic	Internal Combustion Engine	INCE383	
•								•						•	Basic	Design and analysis of agricultural experiments	DAAE302	
•						•							•		Basic	Maintenance and Repair of Tractors	MART475	
•	•			•					•	•			•		Basic	Heavy machines and equipment	HEME476	
•	•			•					•	•			•		Basic	Hydraulic system and Equipment	HYSE477	
•	•	•				•			•	•				•	Basic	Food processing Equipment manufactures	FPEM478	2026-2025 fourth Year/ First Semester
•		•			•				•				•	•	Basic	Electrical systems of Tractor	ELST479	
		•						•			•				Basic	Agricultural Buildings	AGBU480	
•									•			•			Basic	Research Project 1	REPR402	
•									•					•	Basic	Computer Application 4	COMA401	
•	•			•					•	•			•		Basic	Harvesting Equipment	HAEQ481	
•	•					•	•			•					Basic	Post Harvest Equipment	POHE482	
•	•			•					•	•			•		Basic	Management of Agricultural Machineries	MAAM483	
•					•						•				Basic	Plant Protection Equipment	PLPE484	2026 – 2025 fourth Year/ Second Semester
•	•			•					•	•			•		Basic	Forage Equipment	FOEQ485	
			•											•	Basic	Seminar	SEMN404	
								•				•			Basic	Research Project 2	REPR403	
•									•					•	Basic	English Language 4	ENGL400	

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation**